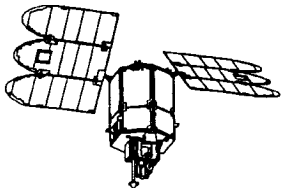


TOMS/EP

Total Ozone Mapping Spectrometer/Earth Probe

Spacecraft Sketch	Mission Objective
	The goal of the Total Ozone Mapping Spectrometer (TOMS) Earth Probe mission, which is part of NASA's Mission To Planet Earth (MTPE) Phase I program, is to: 1) continue the high-resolution global mapping of total ozone on a daily basis that began with the Nimbus 7 SBUV/TOMS; and 2) detect global ozone trends to verify depletion predicted by atmospheric chemistry models. The TOMS/Earth Probe (TOMS/EP) is the first of a series of NASA Earth Probe missions, which also includes the METEOR 3/TOMS2 (launched 1991) and the ADEOS/TOMS (launched 1995).

TYPE OF MISSION	PROGRAM OFFICE	PROJECT LEAD CENTER	MANAGEMENT APPROACH	S/C CONTRACTOR	I&T CONTRACTOR
EARTH SCIENCES & APPLICATIONS	MISSION TO PLANET EARTH	GSFC	OUT-OF-HOUSE	TRW	TRW

Payload Description
The TOMS-EP carries only one instrument: the Total Ozone Mapping Spectrometer (TOMS). The TOMS-EP spacecraft is based on the TRW/DSI Eagle bus which was developed under the USAF STEP program. The spacecraft is 3-axis stabilized so that the TOMS instrument is nadir-pointed with about 0.5 degree control and about 0.1 degree knowledge from measured altitude data. The TOMS/EP spacecraft bus is designed to accommodate all of the TOMS instrument requirements in support of a 2-year lifetime with a 3-year lifetime goal.

INSTRUMENT NAME	ACRONYM	PI AFFILIATION	PRINCIPAL INVESTIGATOR	I&T CONTRACTOR
TOTAL OZONE MAPPING SPECTROMETER	TOMS	GSFC	P. SABELHAUS	OSC

Instrument Descriptions
The TOMS/EP Total Ozone Mapping Spectrometer (TOMS) consists of the Instrument Assembly which includes: 1) Optics Module (OPM); 2) Electronic Module (ELM); 3) Diffuser Module; and 4) data recorder. The OPM consists of a fore-optics unit, an f/5 250 mm focal length Ebert-Fastie ultraviolet spectrometer, and a photomultiplier. The ELM has seven primary operating modes: Standby, scan, solar calibration, electronic calibration, diffuser reluctance calibration, wavelength monitoring and diagnostic. The Diffuser Module consists of three diffuser plates allowing observations of the backscattered solar radiation. The data recorder records the TOMS measurements throughout the daylight portion of the orbit.

Launch
6/27/94